First Quarter Regional Research Meeting: Northern Region, Ghana

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| Produced by | International Institute of Tropical Agriculture |
| Published by | International Institute of Tropical Agriculture |
| May 17, 2016 | |

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Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three regional projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads the program’s monitoring, evaluation and impact assessment. <http://africa-rising.net/>

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# Background

Africa RISING project in Ghana is a USAID government funded project led by International Institute of Tropical Agriculture (IITA). It is a research project into sustainable intensification and integration of natural resources to improve productivity, nutrition, income security and reduce hunger and poverty in smallholder families especially children and women. The project is being implemented in the three northern regions of Ghana (Northern, Upper East and Upper West). In Northern Region the project is implemented in two districts, namely Tolon and Savelugu Districts. The project is implemented in five communities (Jana, Duko, Botingli, Tibali and Kpallung) in Savelugu Distirct and five communities (Cheyohi No. 2, Tingoli, Gbanjon, Tibogunayili and Kprim) in Tolon District.

# Regional Research Meetings

Africa RISING project Ghana organizes quarterly regional research meetings in the three northern regions. The objective of the meetings is to provide a platform for interaction among work research theme leaders, FBOs and other partners to foster integrated approach for implementing project activities.

# Highlights of Regional Research Meeting

The meeting was held on 17th May, 2016 at IITA conference hall in Tamale, Ghana. Participants included; research theme leaders, FBO members from all intervention communities, District Directors of Agriculture, and Research for Development (R4D) platform members.

## Meeting Objectives and Expected Outcomes

The key objective of this meeting is to provide a niche for interaction among research theme leaders and partners to foster collaborative approach in planning and implementing project activities. Specific objectives of the regional research meeting were to present:

1. Update and status of project implementation from January to March, 2016
2. Key implementing challenges and feasible measures taken
3. Achievements/successes
4. Further plans and road-map for the next quarter
5. Key anticipated achievements and challenges

The expected outcomes of the meeting were to:

1. Deliver update and status report for implementation of project activities
2. Identify challenges affecting implementation of project and possible solutions.
3. Propose activities for the next quarter.

## Meeting process

The meeting was chaired by Mr Stephen Frimpong, a Research Associate at IITA-Tamale. The meeting started at exactly 9: 00 am with self-introduction of all the participants.

# Welcome Address by Regional Co-ordinator

Mr. Abdul Rahman (Northern Regional Coordinator for Africa RISING) welcomed all participants to the meeting. He expressed his gratitude to all participants for making the meeting possible. He further emphasized on the importance of collaboration and creating synergies between all partners and stakeholders. He therefore charged Africa RISING team, partners and stakeholders to liaise with one another to implement related research activities. He concluded by entreating participants especially activity leaders to make profound contribution to the meeting.

The IITA country representative and chief scientist of Africa RISING project, Dr. Asamoah Larbi who was engaged in another meeting made a brief appearance at the meeting to address the participants. He took the opportunity to highlight the recommendation of the review team. According to him the review team outlined the following points as the shortfall of Africa RISING Ghana:

1. Integration of activities
2. Soil base research
3. Livestock component
4. Free seed and fertilizer provision
5. R4D platform/ integration
6. Publications

He therefore charged research scientist, partners and stakeholders to bring out proposals, suggestions and contributions to address these challenges should the 2nd phase be granted.

Mr. Frimpong, chairman of the meeting took participants through the previous meeting munites. This was followed by a session of presentation by research theme leaders, Ministry of Food and Agriculture (MoFA) directors and Research for development platform members.

# Improving Cereal-Legume Cropping System Trials in Northern Region

Mr. Abdul Rahman, Regional Coordinator for Africa RISING, made a presentation to update participants on status of activities on cereal-legume cropping systems in Northern Region. He outlined activities carried out from January to march as follows:

1. Data cleaning and analysis- January- February
2. Review and planning meeting-March

He emphasized on the research findings compiled for three (3) years. According to him, a research finding becomes reliable after conducting the study for a maximum of three (3) years. He presented the results of four (4) major Africa RISING technologies compiled for three (3) years to participants. According to him, the results on effect of Nitrogen fertilizer rate on Six (6) improved varieties of maize revealed that N rate had significant difference on grain yield and stover yield of maize. TZEE W STR QPM C0 produced the highest grain yield followed by DT SR W C0 F2 but farmers cannot have access to these varieties because they are not released varieties. He therefore recommended Omankwa and Abrohemaa to farmers because they are early maturing and can yield appreciably in this current period of erratic rainfall.

On the results of spraying regime on cowpea, he said three (3) spraying gave significant increase in grain yield compared to once spraying. Cowpea variety affected only fodder yield with Padi-tuya recording the highest fodder yield. He therefore recommended Padi-tuya to crop-livestock farmers who have interest in both grain and fodder yield. In his presentation of results on Integrated soil fertility management (ISFM) on two (2) varieties of soyabean (Jenguma and TGX-1904-6F). He revealed that soybean variety had significant effect on only fodder yield and Jenguma variety produced higher fodder than TGX-1904-6F. ISFM showed significant effect on grain and fodder yield with TSP + Fertisoil recording the highest grain yield. He recommended a combination TSP at 60 kg/ha and fertisoil at 4 t/ha to be used by farmers to increased soyabean production. He also recommended jenguma to farmers because of it non-shattering trait.

He went further to brief participants on the results of Phosphorus fertilizer rate on groundnut. He revealed that phosphorus rate and groundnut variety were significant on only fodder yield. Azivivi recorded the highest fodder yield and 90 kg ha-1 P2O5 also had the highest fodder yield. On farmer preferences for varieties, he revealed that Manipinta was the least preferred by farmers because of its low oil quality.

He ended his results presentation session on cereal-legume strip cropping. He revealed that intercropping was more productive than the sole cropping of cereal and legume. Percentage land saved and land equivalent ratios recorded were high with intercropping than sole cropping. On farmer preference, male farmer prefer combination with more maize ratio while female farmer prefer combination with more legumes.

He reckoned limited resources as major challenge encountered by Africa RISING. He concluded his presentation by outlining plan of activities for the next three months. These include:

1. Preparation for 2016 season
2. Establishment of field trials
3. Training of farmers on “GAP”

# Socioeconomic studies on adoption monitoring of Africa RISING technologies

Mr Frimpong made a brief presentation on adoption monitoring of Africa RISING Technologies. He mentioned that it is inherent for participating farmers and communities within the zone of influence where the project operates to see for themselves new innovation and technologies and select or adopt that which works best for them. It is also important for economic and biophysical evaluation of these technologies to be studied to have a better understanding of:

1. Which technologies are being selected and/ or modified by farmers
2. What influence the choice of the technologies?

He outlined the main activities performed from January to March as follows:

1. Phase II Data Collection

* Development of Phase II Instrument
* Training of Enumerators
* Pre-testing of Instrument
* Data collection

1. Completion of two rounds of data

* Collection of Geo-referenced data for:
* 156 farming Households
* 510 parcels and 780 plots
* Completion of data entry
* Data exploration

He recounted that enumerator and respondent drop out were the main challenges of studies. He concluded his presentation with the plan of activities for the next three (3) months as follows:

1. Complete cleaning of data & sharing
2. Basic analysis
3. Reports (Non-technical & technical reports)
4. Selective in-depth analysis
5. Disseminate findings

He also acknowledged the following people for their profound contribution towards the study:

1. Farmers/Respondents
2. Community Facilitators
3. Enumerators
4. Regional Coordinators
5. Others

# Sustainable land and soil management in cereal-based systems of Northern Ghana

Dr. Davie Kadyampakeni, a research scientist at IMWI began his presentation on sustainable land and soil management in cereal-based systems of northern Ghana by updating participants on status of activities from March to April. These include:

1. A review and planning meeting was successfully conducted in Ghana: 30 March - 1st April, 2016
2. At the meeting: The Soil and Water Management Theme presented past work and on-going activities in the form of a poster
3. A joint work plan was drafted with the Ghana Team, revisions made and submitted to Project management
4. A research Protocol for 2016 has been drafted, awaiting feedback from other team members for joint action before cropping season

Dr. Kadyampakeni stated key implementing challenges and measures taken. These include:

1. Field moisture monitoring equipment. According to him, additional moisture meter has been purchased so that both northern and upper east region would have one each.
2. Receding water levels. A submersible electrical pump was purchased to support irrigation even when water levels are low.

He also mentioned major achievement and successes of the project to participants. These include:

1. Successful implementation of 2015 cropping season
2. Training and capacity building of farmers conducted
3. Successful deployment of weather stations in Upper East, Upper West and Northern Regions

He further talked briefly on the plan of activities for the forthcoming season. These activities include:

1. Conduct joint discussions with team on Research Protocols for field implementation
2. Liaise with team on starting up field preparations for the cropping season
3. Farmers will have reinforced training on soil and water conservation before cropping season starts
4. Identify farmers for supplementary irrigation of dual purpose crops.

He concluded his presentation on a four (4) points anticipated challenges and achievement. These were:

1. Anticipated Challenge: Failure of rains to come on time or drought stress due to rainfall variability
2. Anticipated Achievement: Ensure that field trials are conducted successfully to finalize work that can feed into publishable findings
3. Anticipated challenge: Failure to have coordinated understanding and agreement on research protocols
4. Anticipated Achievement: A research Protocol for 2016 has been drafted. We anticipate positive interactions from team members for joint action before cropping season

# Humid season activities for AR 2016: Seed Production in Upper East Region

Dr. Jean-Baptiste Tingnegre, a research scientist at AVRDC, gave an update on the survey conducted in February 2015 involving more than 100 farmers from Nyangua and Savelugu. The outcome of the survey revealed non- access to quality vegetable seeds as major constraint for vegetable production in Nyangua.

He stated that the main activity for the forthcoming months is to sustain vegetable production for farmers of Northern Ghana through better access to quality seeds of indigenous vegetable crop species. He added that Nyangua, Tekuru in Upper East region will be primary communities of interest for the study. He outlined how the project will be executed in the two (2) communities as follows:

1. Materials and methods

* Sites: Nyangua, Tekuru in Upper East region
* Genetic materials**:** Okra, pepper, tomato/roselle
* Nursery Establishment and land preparation:
* Planting
* Field maintenance
* Harvesting of seed

1. Certification of seeds and distribution
2. Data collection.

# Intensification of integrated crop-livestock systems in Northern Ghana

## a. Small Ruminant Feed and Health Intervention

Mr. Sadat Salifu, a research scientist at CSIR-Animal Research Institute gave an update of feed and health intervention in nine (9) communities in Northern, Upper East and Upper West region. He also gave an update on the status of activities performed from January to March 2016. According to him, the following activities were carried out:

1. 10 months of data collection on live weights, flock dynamics
2. Community level Peste de petit ruminants (PPR) vaccination campaign in 6 treatment communities.

* Target is to cover about 4000-5000 small ruminants.
* Vaccination is ongoing in Northern Region and parts of Upper East Region.

1. Training of Community Animal Health Workers (CAHW’s) to help in disease surveillance and to offer limited veterinary services to communities in which they are resident.

He also mentioned the PPR vaccination of 2,330 sheep and goats and the training of 10 community animal health workers in the Northern region as a major achievement of the intervention from January to March.

Mr. Salifu outlined also key challenges and measures taken to address them. In the outbreak sheep pox, antibiotics were administered to prevent secondary infection. And new vaccines were procured when there was a shortage of the vaccine in some regions. Regional veterinary officers had been duly informed of the outbreak.

He concluded his presentation by outlining future plans for the next quarter. These include:

1. Complete PPR vaccination and training of CAHWs before the start of farming season.
2. Complete 12 months of data collection for small ruminants on feed and health intervention.
3. Scouting of Africa RISING community technology parks for possible inclusion of livestock fodder varieties.

## b. Conservation of Crop Residues

Dr. Addah Weseh, a lecturer at the University for Development Studies made a presentation on the importance of crop residues in the growth performance of small ruminants in Northern Ghana. He also gave an insight on availability of crop residue during cropping season and dry season. According to him, animal growth is proportional to feed availability and therefore emphasized on the importance of conserving crop residues. He stated that crop residues can be conserved by drying, ensiling and chemical treatment.

He further talked about the training of farmers on ensiling groundnut fodder in northern, upper east and upper west region. Out of the targeted 135 farmers, 105 farmers benefited from the training.

He recounted some challenges encountered in the process of the training. These include:

1. Literacy and numeracy.
2. Community apathy and demands
3. Translation of scientific terminologies in to local dialect (e.g. pH)
4. Poor aerobic stability

Dr. Weseh mentioned that should the phase II of Africa RISING be granted, more ensiling technologies will be explored to help farmers conserve crop residues. He concluded the presentation by outlining anticipated achievement and challenges as follows:

1. Farmers are already ensiling crop residues by themselves
2. Difficulty of collecting reliable data in on-farm trials
3. Comprehensive data on fermentation characteristicsof crop residues (on-farm and on-station) and growth performance of small ruminants will be good for publication in good journals.

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# Report on Savelugu MoFA activities

Mr. Sumani Ibrahim, an AEA at Savelugu Municipal Department of Agriculture highlighted the activities of his outfit carried out from the month of January to March, 2016 on behalf of Mr. Francis Neindow, director for Savelugu Municipal department of Agriculture. According to him the following activities were performed:

1. Harvesting and data collection of harvested grains and stover in all he five intervention communities in the month of January and February, 2016.
2. The compiled data from the field and the weights were transferred onto the data forms (protocols).
3. This was followed by submission of the filled or completed protocols by the Agricultural Extension Agents
4. Sensitization and training of farmers for this year’s cropping season in March 2016.
5. Sensitization and training of farmers on the benefit of good site selection, good land preparation, good seed selection and the choice of varieties for various crops.

Mr. Ibrahim went further to highlight the major challenges encountered during the activities. He mentioned drought and untimely available tractor service. He made an appeal to Africa RISING to help address these challenges. He also highlighted the achievement of the activities performed. These were:

1. Knowledge of farmers on agronomic practices has improved
2. Farmers see Africa RISING project as beneficial as their productivity levels have improved.

He concluded his presentation by commending Africa RISING Ghana and hope the project continue its enormous contribution to farmers.

# Report on Tolon MoFA activities

Mrs. Sylverline Mba, an AEA at Tolon Municipal department of Agriculture gave an update on the status of activities performed from January to March, 2016. Data collection and submission of data to Africa RISING Ghana were major activities performed.

She also outlined the plan of activities for the coming months. These include:

1. Farmer sensitization
2. Seed bed preparation
3. Field layout
4. Planting

She concluded her presentation by expressing farmers’ appreciation to the project and farmers hope to increase their acreages if the chance is given to them in the forthcoming season.

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# Report on Tolon R4D activities

Mr. Issah Abukari (R4D Treasurer) gave an update of activities carried out in the District. According to him, restructuring of the R4D platform was the major activity. The platform was restructured into District and community platform level. This move was to decentralize the platform to community level to foster growth of the R4D in the District. He further mentioned the composition of district and community platform level and the functions of each team or member. Terms, conditions, ethics and constitution of the platform were also acknowledged.

Mr. Abukari outlined the contribution of R4D platform to project research agenda. These include:

1. The researcher-led mother trials in the technology parks are jointly implemented with some members of the community-level platforms. Farmers from the community-level platforms establish and manage the baby and demonstration (scaling-out) trials.
2. The platforms provide land and labor for trials; assist with Farmers’ Field Days and farmer-to-farmer dissemination of information.

# Closing remarks

The chairman in his closing remarks thanked all the participants for their cooperation and immense contributions.

# Annexes

**Annex 1:** List of Participants at 1st quarter regional research meeting

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| S/N | Name | Title | Institution |
| 1 | Inusah Adam | Contact Person | Cheyohi |
| 2 | Fuseini A. Majeed | Contact Person | Tingoli |
| 3 | Amadu Adam | Contact Person | Kprim |
| 4 | Abukari Abdul-Nasir | Contact Person | Gbanjong |
| 5 | Ahmed Issah | Contact Person | Jena |
| 6 | Ziblim Fuseini | Contact Person | Botingli |
| 7 | Nassam Mohammed | Contact Person | Kpalung |
| 8 | Issah Mohammed Saain | Contact Person | Duko |
| 9 | Alhassan Fuseini | Contact Person | Tiborgunayili |
| 10 | Davie Kadyampakeni | Research Scientist | IWMI |
| 11 | Jean-Baptiste Tingnegre | Research Scientist | AVRDC |
| 12 | Addah Weseh | Lecturer | UDS/ ILRI |
| 13 | Sadat Salifu | Research Scientist | CSIR-ARI/ ILRI |
| 14 | Issah Abukari | R4d Representative | Tolon |
| 15 | Cosmos Nyar | Deputy Director | Dept. of Agric. Tolon |
| 16 | Mbah Sylverline | Extension Officer | Dept Of Agric. Tolon |
| 17 | Sumani Ibrahim | Extension Officer | Dept. of Agric. Savelugu |
|  | Asamoah Larbi | Chief Scientist | IITA |
| 18 | Abdul Rahman Nurudeen | Research Coordinator | IITA |
| 19 | Mohammed Amisu | Research Supervisor | IITA |
| 20 | Stephen Frimpong | Research Associate | IITA |
| 22 | Nancy Adobea Addo | Research Supervisor | IITA |
| 23 | Seidu Mohammed | National Service Personnel | IITA |
| 24 | Evanston Calyx Broni | ICT Specialist | IITA |